

## **CLAIMS:**

1. A board to board connector assembly, comprising:

a male connector component and a female connector component, the two connector components including housings which are engageable with each other by way of at least a portion of said male connector component being received within a portion of said female connector portion, said two connector components including a plurality of cavities, each cavity including a terminal assembly, the terminal assembly including an insulative body portion and a pair of differential signal terminals disposed in the body portion;

opposing portions of said male and female connector being plated with a conductive substance, the conductive substance being further disposed on portions of said male and female connectors that encompass each of said terminal assemblies so as to provide a reference ground for said differential signal pairs and to electrically isolate adjacent ones of said terminal assemblies;

each of said male and female connector components further including means for engaging each other when said male and female connector components are assembled together, said engagement means being disposed on opposite ends of said male and female connector components and along a portion of a longitudinal axis of said male and female connector components.

2. The connector assembly of claim 1, wherein said conductive substance is a metal coating.

3. The connector assembly of claim 1, wherein said female connector component housing includes a central connector portion and an outer shroud extending around and spaced apart from said central connector portion by an intervening slot that encompasses said female connector component central connector portion, and said male connector component housing includes a central connector portion and an insertion wall that encompasses the male connector component central connector portion, the insertion wall being received within said female connector component slot when said male and female connectors are assembled together.

4. The connector assembly of claim 3, wherein outer shroud and insertion wall have a one-way symmetry that permits them to be assembled only when shroud and insertion wall are aligned together.
5. The connector assembly of claim 1, wherein said male connector component engagement means includes a longitudinal slot and said female connector component engagement means includes a blade member projecting upwardly from said female connector component central connector portion.
6. The connector assembly of claim 5, wherein said male connector component engagement means includes a plurality of spring arms formed integrally with said male connector component, the spring arms flanking both sides of said longitudinal slot.
7. The connector assembly of claim 6, wherein said spring arms include alternating wide and narrow spring arms.
8. The connector assembly of claim 1, wherein said engagement means includes opposing complementary posts and depressions.
9. The connector assembly of claim 1, wherein said engagement means includes two sets of opposing projections and depression formed as part of sidewalls of said two connector components and extending longitudinally along said two connector components.
10. The connector assembly of claim 1, wherein said conductive substance is a metal coating that extends on all exterior surfaces of said two connector components.
11. An electrical connector, suitable for use in high-speed signal transmission applications, comprising:
  - an insulative housing, the housing having a bottom for mounting to a circuit board and a top, opposing the bottom, for mating to an opposing connector, and a body portion interconnecting said top and bottom together, the body portion including a

plurality of cavities formed by the intersection of a center wall of said housing with a plurality of transverse walls, each cavity including a terminal assembly;

each terminal assembly including an insulative body portion and a pair of differential signal terminals disposed in the terminal assembly body portion, each terminal having opposing contact and tail portions extending from said terminal body portions, said terminal assemblies being received in said housing body portion cavities so that said terminal tail portions extend from said housing bottom and said terminal contact portions are accessible from said housing top;

said housing having a plurality of exterior surfaces, and at least the exterior surfaces of said center and transverse walls being plated with a conductive metal coating so as to substantially encompass said terminal assemblies with a conductive ground shield; and,

said housing including means integrally formed therewith for engaging said opposing connector when said housing and said opposing connector are mated together.

12. The connector of claim 11, wherein said engagement means includes a pair of latching lugs disposed on opposite ends of said housing and aligned therewith, and an elongated engagement member extending longitudinally along said housing.
13. The connector of claim 11, wherein said engagement member includes a blade member that projects up from said connector housing, said conductive metal coating also extending over the blade member.
14. The connector of claim 11, wherein said engagement member includes a longitudinal slot that is flanked by a plurality of spring arms.
15. The connector of claim 14, wherein said spring arms include a plurality of wide and narrow spring arms, said wide spring arms being attached to said transverse walls.
16. The connector of claim 11, wherein said engagement means includes a plurality of complementary, alternating projections and depressions formed in sidewalls of said housing.

17. The connector of claim 11, wherein said connector housing includes a central connector portion and a shroud wall that surrounds the central connector portion, the shroud wall being separated from said central connector portion by an intervening slot.
18. The connector of claim 11, wherein said housing includes a key formed at one end, the key being received within a slot of said opposing connector, and said connector housing being pivotally movable about said key when mating to said opposing connector.
19. A connector assembly for effecting a connection between two circuit boards, comprising:  
a plug connector and a receptacle connector, the plug and receptacle connectors including housings that are plated on exterior surfaces with an electrically conductive metal coating, each of said plug and receptacle connector housings further including a plurality of cavities formed therein; and,  
a plurality of terminal assemblies received in each of said cavities, each terminal assembly including an insulative body portion that supports a pair of differential signal terminals and insulates the terminals from contact with said connector housing conductive metal coating, said plug and receptacle connector housings being matable together so that exterior surfaces of said plug and receptacle connectors touch each other and said metal coating encompasses each of said terminal assemblies to provide reference ground shielding for each pair of differential signal terminals.